

On the Organization of Batrachobdella (B. Latasti, C. Vig.).

By M. C. VIGUIER.

This little Hirudinean lived parasitically upon an Algerian Batrachian, *Diploglossus pictus*, which, combined with a certain external resemblance, led to its being taken for *Glossiphonia algira*. Like the latter animal, it presents only two eyes, but is in other respects distinguished therefrom, even externally, by its smaller size, its more regular form, not attenuated in front, its greener colour, and its proportionally larger sucking-disk. The following are the results of its anatomical examination.

Generative organs.—The genital orifices are situated, the male on the twenty-first ring, and the female between the twenty-third and twenty-fourth. There is no regular penis, but a mere button, as in the *Glossiphonia*; this button is generally placed a little to the right of the median line, when the animal is looked at from the lower surface. The epididymi are very large; and, after a certain number of folds, each of them gradually narrows into a very delicate deferent canal. Twelve testes of comparatively large size are arranged in two regular and parallel series. The female apparatus consists of two very small pyriform ovaries, from which start delicate oviducts, opening into a very small matrix situated immediately above the vulva. The latter is transverse and always exactly median.

Digestive apparatus.—There is, as in the *Glossiphonia*, an exsertile trunk, behind which the œsophagus has the aspect of a muscular tube with longitudinal and annular fibres. Above the genital apertures there is a large pyriform brownish inflation, visible by transparence in the living animal, and which is constituted, from without inwards, by rather voluminous brownish cells, and by larger clear cells with a brilliant nucleus, arranged all round the lumen of the digestive tube. Immediately behind this inflation, which, no doubt, performs the function of the liver, are the first lateral cæca, which pass in front of the first testes; five other cæca on each side pass between the testes of each row. Lastly, a seventh pair of narrow cæca comes behind the last pair of testes. The axial portion of the digestive tube between the cæca presents small turbid cells, which also perhaps have the function of hepatic cells. Behind the seven pairs of narrow cæca, and where the cavity of the body is no longer occupied by the testes, come four pairs of large cæca—the first two pairs directed slightly forward, the third nearly transverse, the fourth directed backward. The terminal portion of the digestive tube makes a small loop to the left, and is then directed in a straight line to the anus.

Circulatory apparatus.—The circulatory apparatus much resembles that described by Budge in *Clepsine*; one may even say that it is nearly identical, at least so far as I have been able to discover. The vascular loops of the head, however, advance in front of the eyes further than is figured by that author. The cardiac vessel is exactly similar.

Nervous system.—The nervous system is nearly as described by Baudelot in *Clepsine*. It consists of twenty-one ganglia, not including the collar and the posterior mass. In one type the sub-oesophageal portion of the collar results from a more considerable grouping, and the terminal mass of the chain from a smaller grouping than in *Clepsine*. The number of large cells contained in the vesicles appended to the ganglion is less than is figured in Baudelot's memoir.

To sum up:—*Batrachobdella* approaches the *Glossiphoniæ* or *Clepsinæ* by its nervous system and its circulatory apparatus, while the general arrangement of the generative organs is rather that which occurs in the *Ponbdelleæ* or *Pontobdelleæ*; and the digestive apparatus, although presenting a trunk as in *Clepsine*, differs from what is seen in all other Hirudineæ by the arrangement of the cæca and presence of an hepatic inflation.—*Comptes Rendus*, July 14, 1879, p. 110.

Description of a new Species of Chirocephalus. By JOHN A. RYDER.

The genus *Chirocephalus* does not seem to have been noticed up to the present time in North America; I therefore take much pleasure in announcing the discovery of a hitherto undescribed species of the genus in the vicinity of Woodbury, New Jersey, where it was found in abundance in the ditches by Mr. W. P. Seal, a resident of the place, and an indefatigable collector of the minute life of his neighbourhood.

The genus, as characterized by Dr. Wm. Baird*, has been found in Switzerland, France, England, Russia, and Siberia. The species *C. lacunæ*, most nearly like the one I am about to describe, is figured and described by Guérin, in his 'Iconog. Règne Animale,' as being found at Fontainebleau, France. The differences between our species and Guérin's are, however, sufficiently striking and constant to characterize a well-marked specific type; and I accordingly propose the following specific characterization of the American form:—

Chirocephalus Holmanii, nov. sp.

Claspers moderately robust; second joint forked, longest branch longer than first joint and curved inwards, its tip crossing that of its fellow of the opposite side when in repose; shorter branch less curved, slightly swollen, and rough on the inner surface of its tip, about half as long as the longer branch. Two long fleshy proboscis-like prehensile organs arise from the bases of the claspers, and are coiled up between the latter; muscular fibres pass throughout their length; near their origin and for the first third they are expanded inferiorly into a thin margin with about seven papilliform processes; they then gradually contract, becoming cylindrical at their second third, where about seven well-marked

* Monograph of the Family Branchipodidæ, Ann. & Mag. Nat. Hist. 2nd ser. vol. xiv. 1854, pp. 216-229.